

SYCAMORE CREEK RIPARIAN RECOVERY PROGRAM

**Reintroduction of aquatic species and
reduction of TMDL's through
vegetation management**

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PARTNERS:

- Santa Ana Watershed Association
- Western Municipal Water District
- City of Riverside – Park and Rec.
- CA. Dept. of Fish and Game
- Santa Ana RWQCB

ISSUES:

- Down cutting and sedimentation
- Increased runoff and velocity flows
- Non-point source pollution
- Invasive aquatic species
- Water quality and quantity

Vertical sides due to down cutting.





Active creek channel

Sedimentation

DWR 1995 Land Use Survey

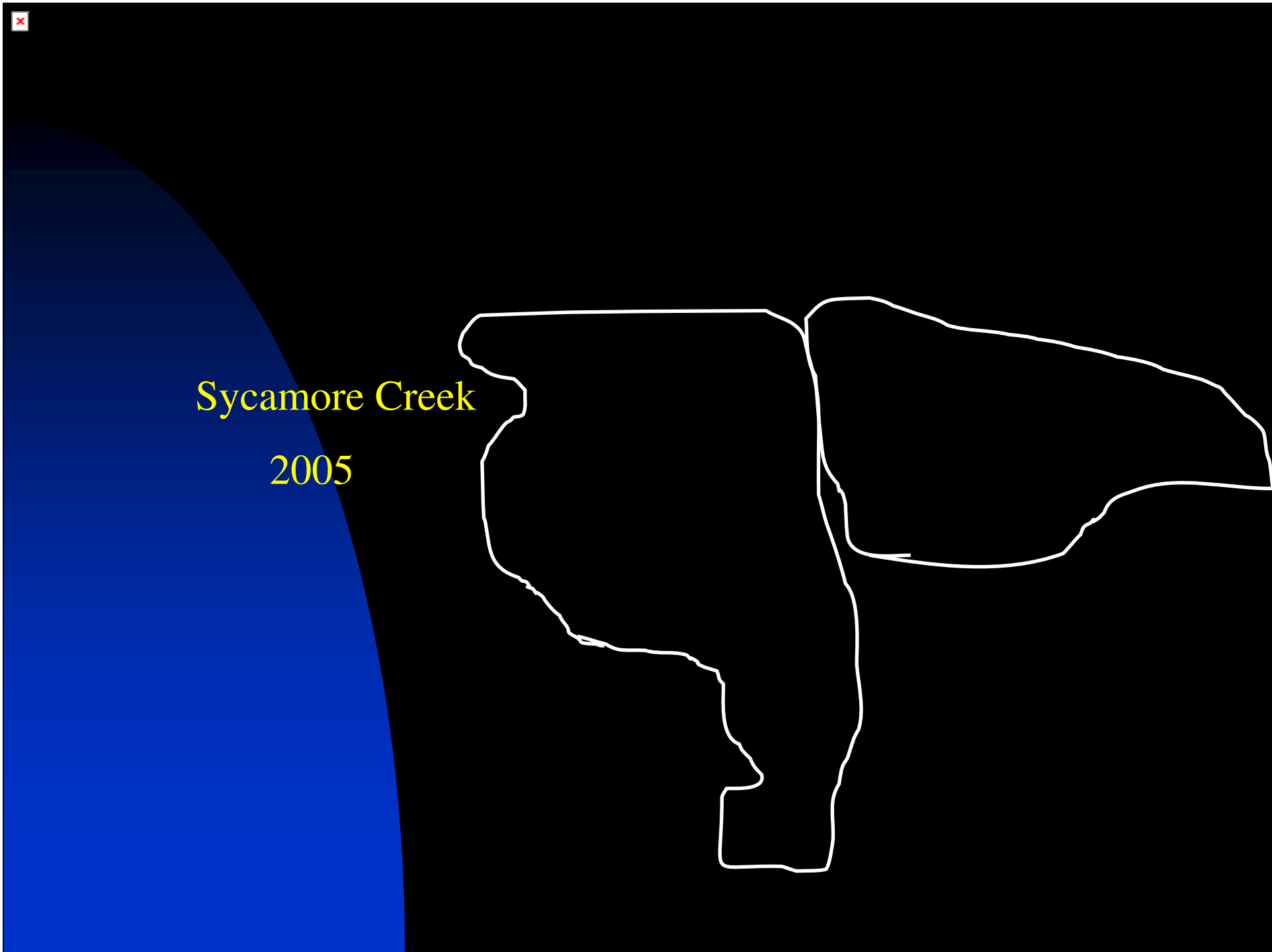
Near by Residential Development

1975: 29,500 acres

1985: 45,020 acres

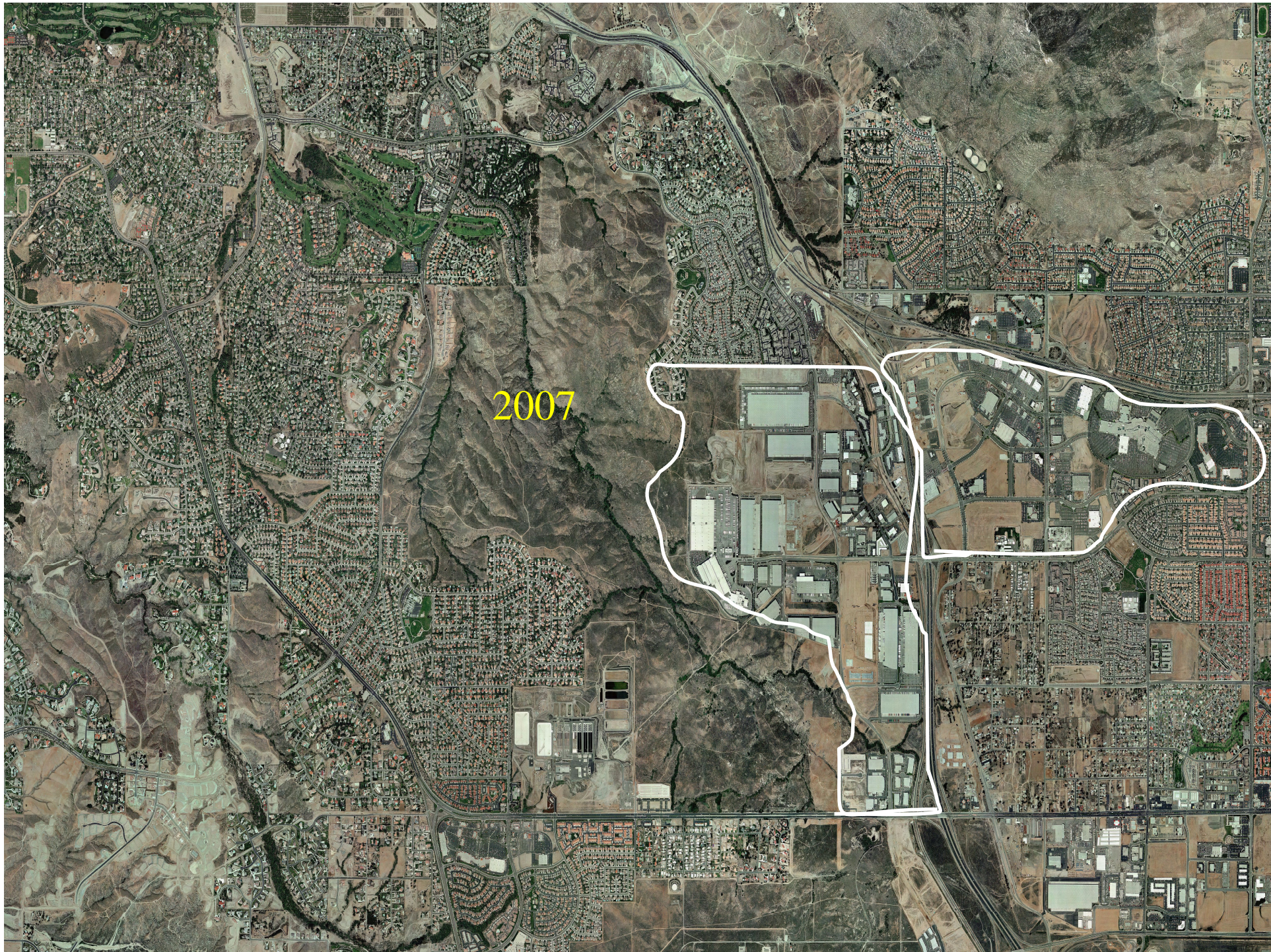
1995: 58,160 acres

2008: 75,000+acres



Sycamore Creek

2005

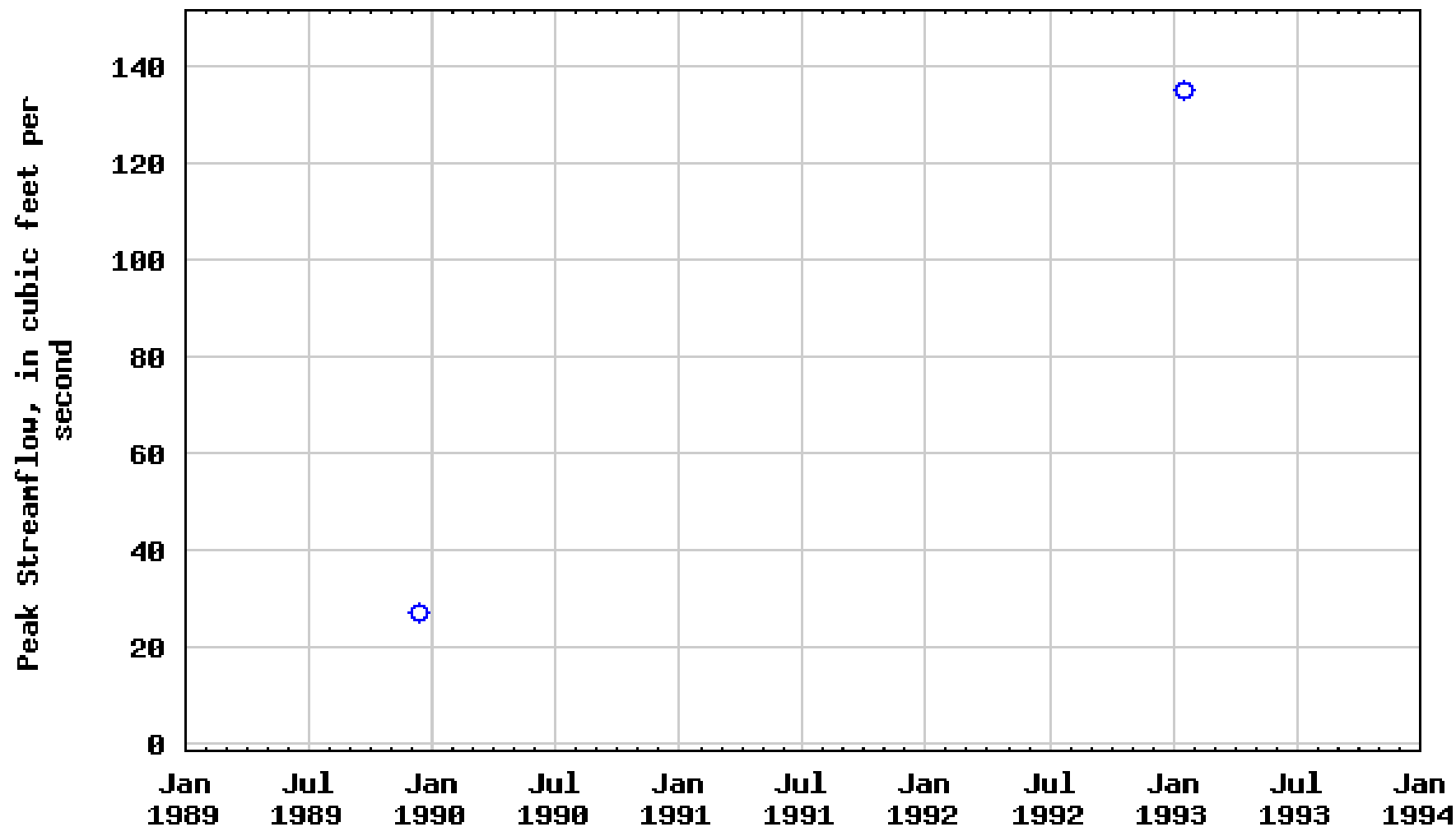


2007

Increased Flows in Similar Drainages



USGS 11070262 PERRIS VALLEY STORM DR A LAT B A PERRIS BLV N CA





Grade Stabilizer Construction









Slope reconstruction and willow wattles



Invasive Aquatic Removal





Arroyo Chub





Release of Arroyo Chub



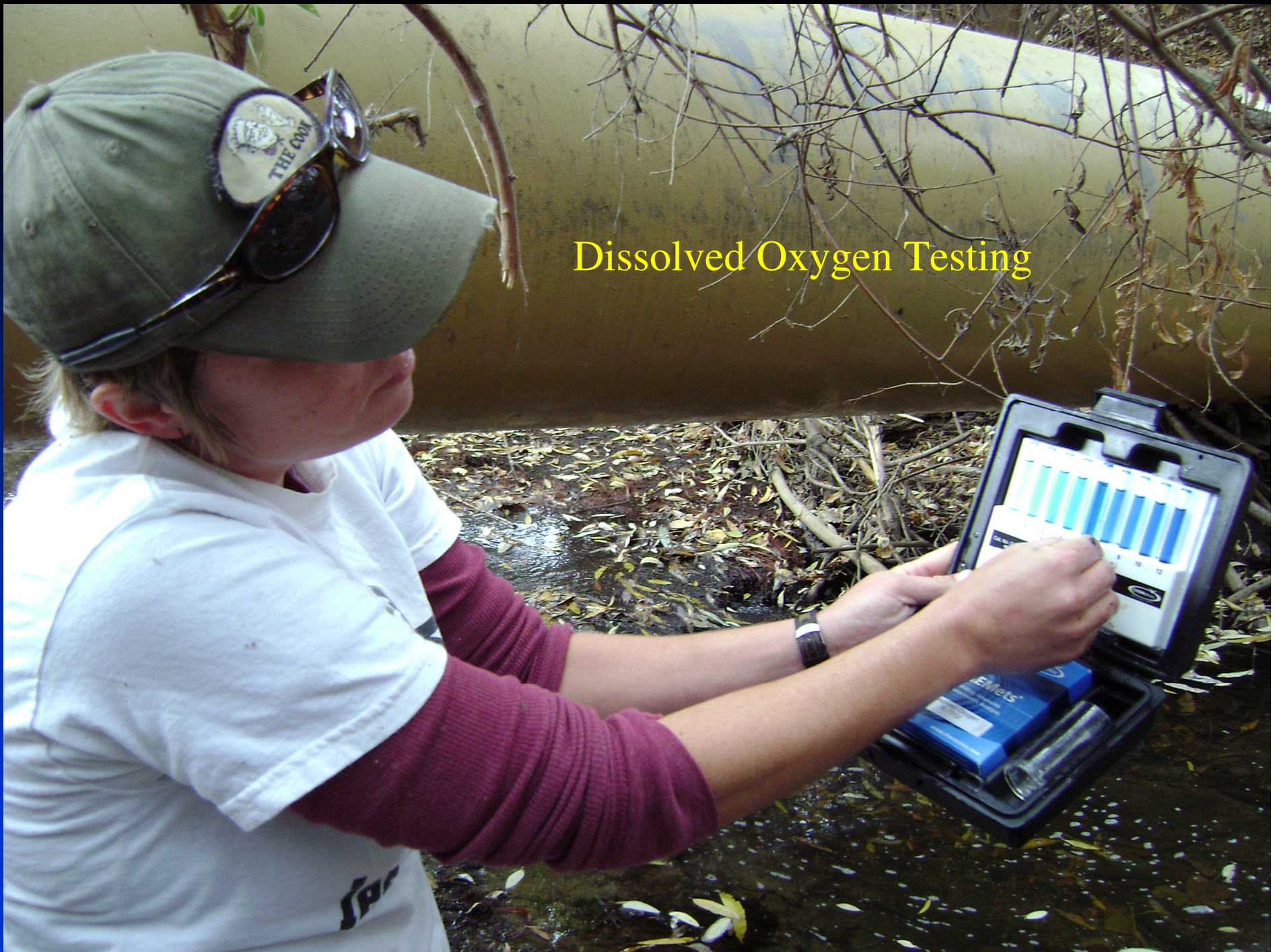


Water Quality Testing

Snapshot Samples



Dissolved Oxygen Testing



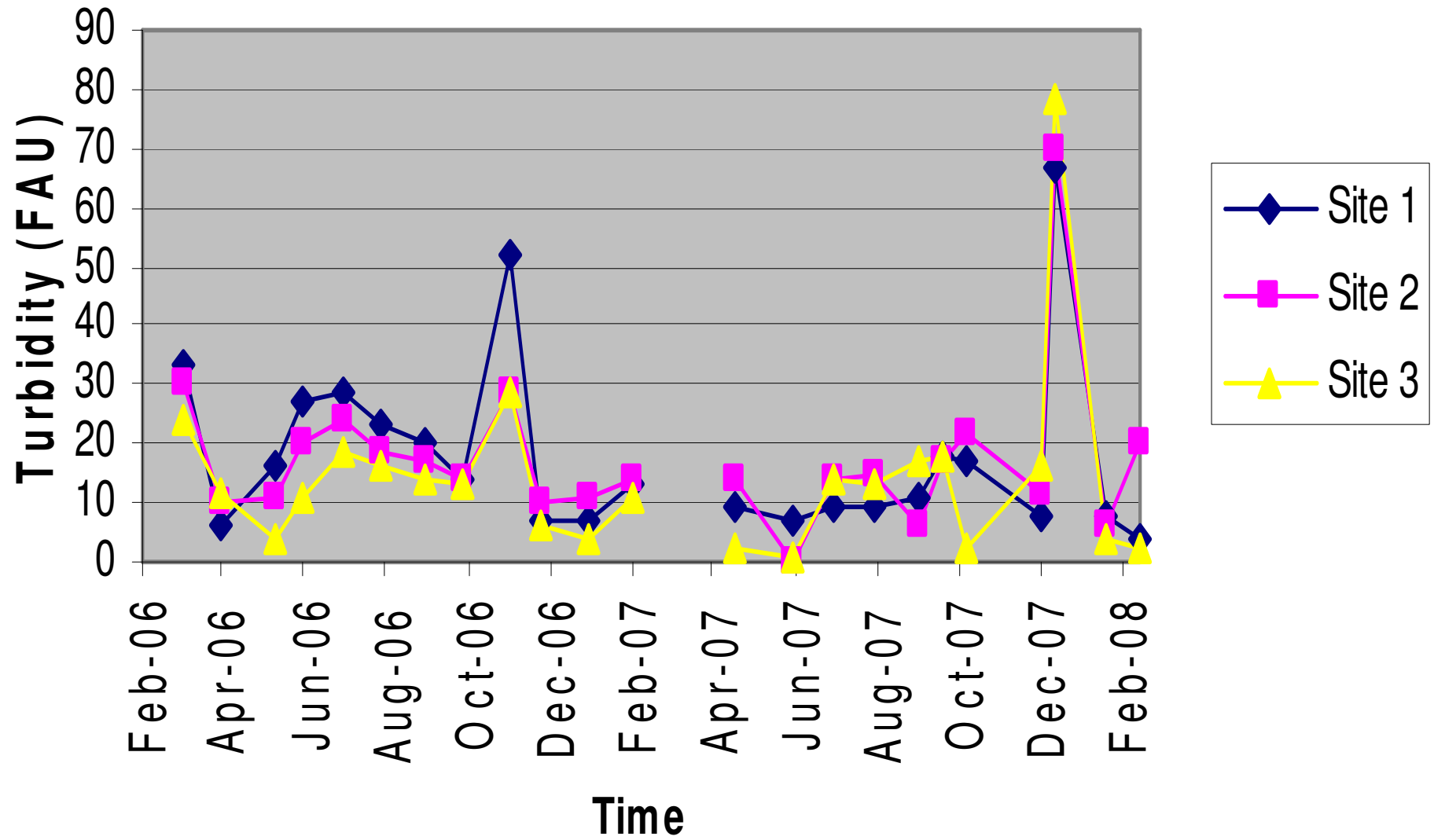




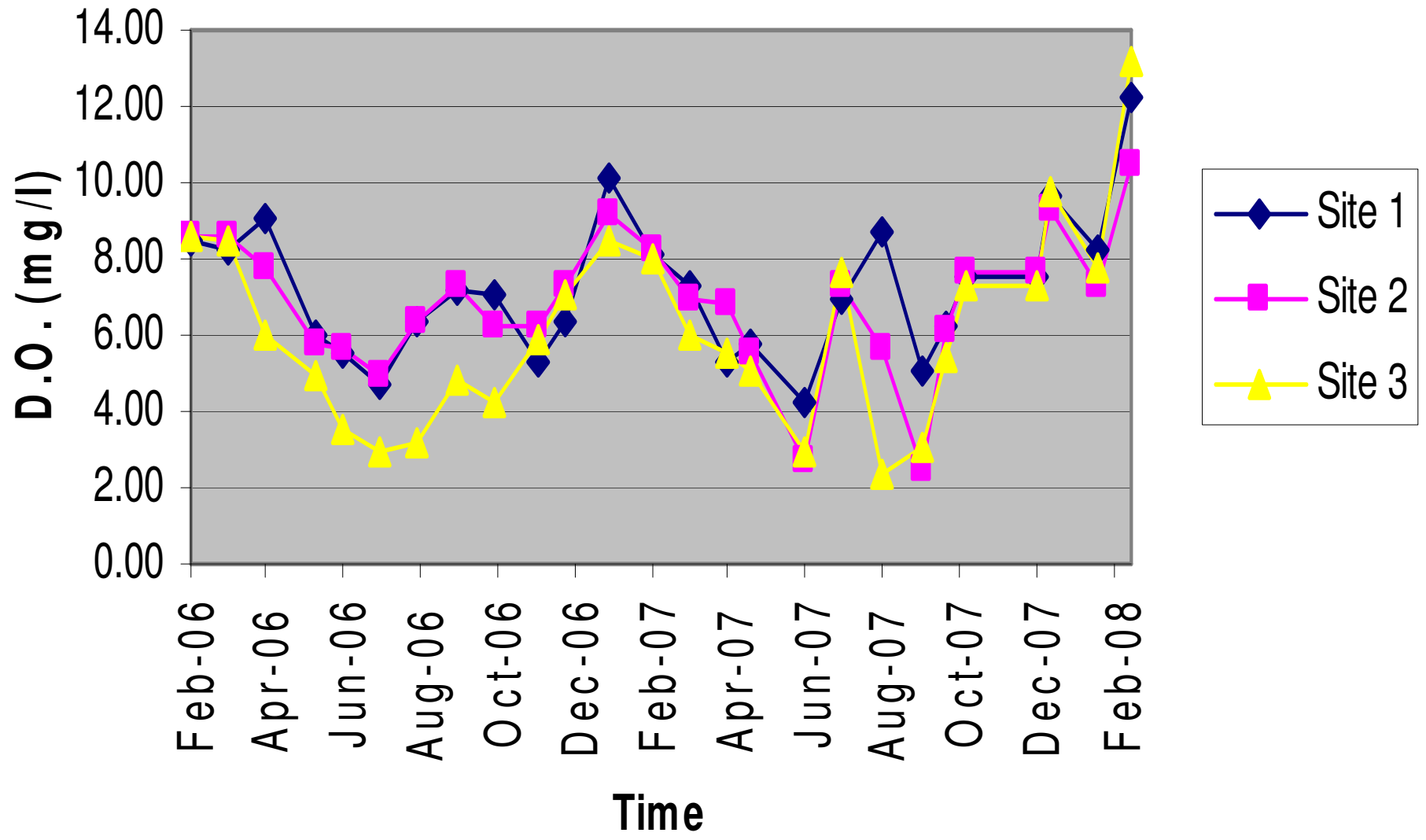
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Macro-Invertebrate Sampling

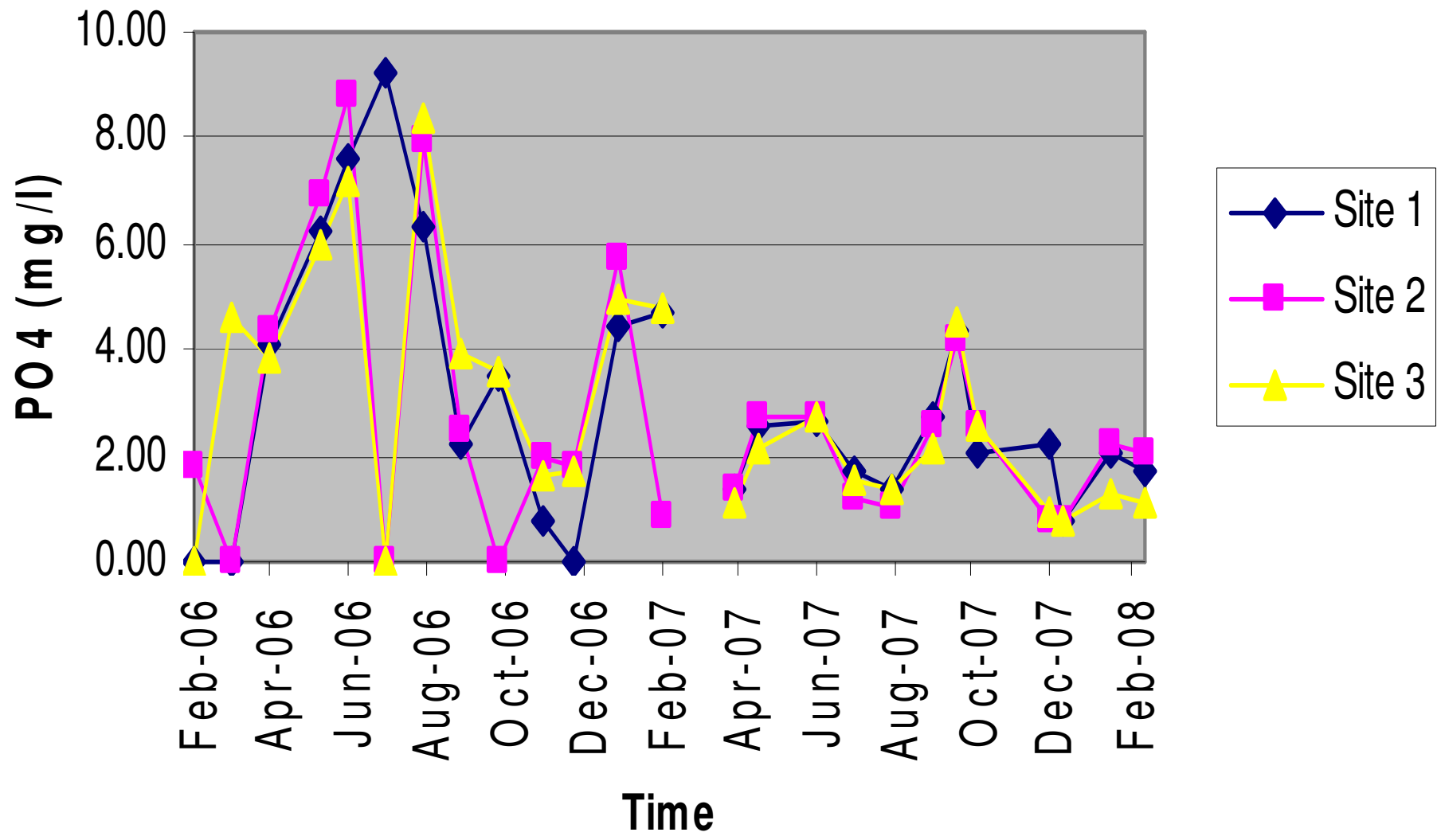
Turbidity



Dissolved Oxygen



Phosphate



Public Education and Outreach

- Overview of Project
- Plants and Animals of the Area
- Help Wild Animals Survive
- Help Habitats Thrive
- Keep Water Sparkling Clean

Sycamore Creek Riparian Recovery Program

Sycamore Creek provides an essential source of fresh, clean drinking water for resident and migrating wildlife and scarcely-found habitat for important native plants and animals.

Because the creek and water quality had been degraded, cooperating agencies worked to improve the riparian (streamside and in-stream) habitat:

A pipeline now augments the water flow during drought.

Non-native invasive plants and aquatic animals were removed, and native plants were replanted.

Erosion control measures were installed to reduce channel erosion and the resulting sediment.

Creating a dependable supply of high quality water has allowed for the reintroduction of the native Arroyo Chub.



Photo courtesy of Jon Farness

The Arroyo Chub is a 3-5 inch long, minnow-like fish. It is adapted to survive wide fluctuations in temperatures and is omnivorous, feeding on algae, plants, small crustaceans, and aquatic insects, including immature mosquitoes.



Photo courtesy of Diana Ruiz

The rock drop structure was constructed across the channel to control erosion.



Waterways of Sycamore Canyon Wilderness Park

Why are southern California's fish absent or rare within their native waterways?

Native fish populations have declined due to human-created impacts to stream habitat including:

- changes in the watershed that result in erosion and debris torrents
- channelization due to land use changes, mainly urbanization
- flood control dams and activities
- introduction of non-native fish
- water diversion
- sand and gravel mining
- water pollution.



The Sycamore Creek Riparian Recovery Program was conducted by the Riverside-Corona Resource Conservation District, supported by 319 Grant funding from the State Regional Water Quality Control Board, with assistance from the Santa Ana Watershed Association, the City of Riverside, and citizen volunteers.



Inland Southern California Riparian Plants and Animals



For copies of this and other habitat posters of inland Southern California, contact the Riverside-Corona Resource Conservation District at (951) 683-7691, or visit www.RCRCD.com.



Help Wild Animals Survive

Do:

Watch wildlife from afar.

Stay out of waterways and control noise during breeding and nesting season, from March to September.

Prevent human and pet food from becoming a food source for wildlife.

Do not leave pet food outside. Secure lids on trash containers.

Don't:

Do not release unwanted animals into the wild.

Do not take animals or eggs from the wild.

Don't allow pets to roam in wildlands or in a waterway.

Control pets on a leash, and clean droppings out of waterways.

Thank You



Arroyo Toad

Photo by Kerwin Russell



Nevada Buck Moth

Photo by Greg Ballmer



Willow Flycatcher

Photo by Dustin Welch



Least Bell's Vireo

Photo by Mark A. Chappell



Great Egret

Photo by Lee Kamey



Raccoon

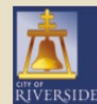
Photo by Dave Morke



Here's how you can help:

To report poaching call CalTIP, a confidential secret witness program at (888) 334-2258.

To report illegal dumping: for the City of Riverside, call (951) 826-5633 or 5311; for Riverside County, call (951) 791-3601.



Help Habitats Thrive

When visiting native habitats, leave nothing behind and disturb as little as possible.
Avoid walking or riding in a stream course or on channel banks, which may cause erosion and sediment.

If you live near a waterway, help your wild next-door neighbors:

Focus necessary lighting downward and inward toward your home, yard, and buildings, not into habitat lands.
Remove invasive plants from your landscape. Replace exotic plants with drought-tolerant and local native plants.



Some problem plants in this area include:



Pepper tree
Schinus molle



Pampas grass
Cortaderia selloana



Giant reed
Arundo donax



Castor bean
Ricinus communis



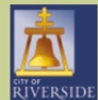
Fountain grass
Pennisetum setaceum

Help control entry into habitat areas.

Close unessential roadways to prevent access for illegal dumping, trespass, and off-road vehicle use.



For more information, request the booklet *Living on the Edge* by calling the Riverside-Corona Resource Conservation District at (951) 683-7691, or visit www.RCRCD.com.



Keep Water Sparkling Clean

Wherever you live, you live in a watershed that drains to a neighboring waterway.



Locally, the water that flows across the land and into streams and storm drains does not go through the water treatment process, as does household wastewater.



To learn about disposal locations for household hazardous wastes, call the *Only Rain Down the Storm Drain* Program of the Cities and County of Riverside at 1(800) 506-2555.

Make sure that the water that flows off your property is clean.

Keep trash and animal waste away from streams and out of gutters and storm drain inlets.

If you have a septic system, inspect and maintain it.

Dispose of waste in its proper place.

Dispose of household hazardous wastes, including oil, paints, batteries and antifreeze, at designated disposal sites.

Reduce the use of hazardous materials in, and around your home.

Use care when applying fertilizers, pesticides, and herbicides.

When possible, reduce or eliminate the use of pesticides by using non-toxic alternatives and biological controls, such as beneficial, predatory insects.

Control erosion to prevent sediment from entering runoff.



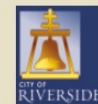
Only rain down the storm drain.



Lacewings are voracious predators that feed on aphids, spider mites and other pests.



When soil washes into streams, it carries pollutants into the water.



Conclusions

- Water Quality Improves with Native Vegetation
- Native Fish and Macro-Invertebrates as Water Quality Indicators
- Public Awareness of Issues in Sub-Watershed
- Reintroduction of Native Fish and Captive Breeding
- Wetland basin and grade stabilizer will remove approx. 1500 lbs/yr. of phosphorus and 1000 lbs/yr. of nitrate.

Wetland Basin BMP

- BMP database determines formula for reduction of phosphorus at 59% and nitrates at 65%.
- www.bmpdatabase.org

Acknowledgements

- Shani McCullough, Craig Mogi and Russell Eggbert – RCRCDD water testing
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